

SIDE LOADED RATING REDUCTION TABLE FOR 3/16" - 3" (120 METRIC TONS)

Angle loads must be applied in the plane of the bow.

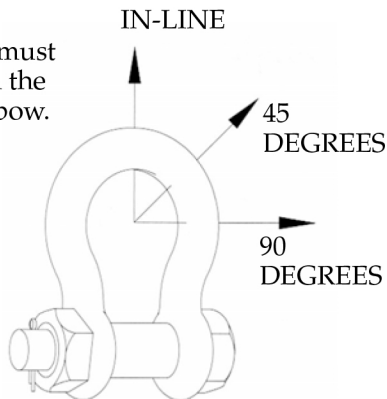


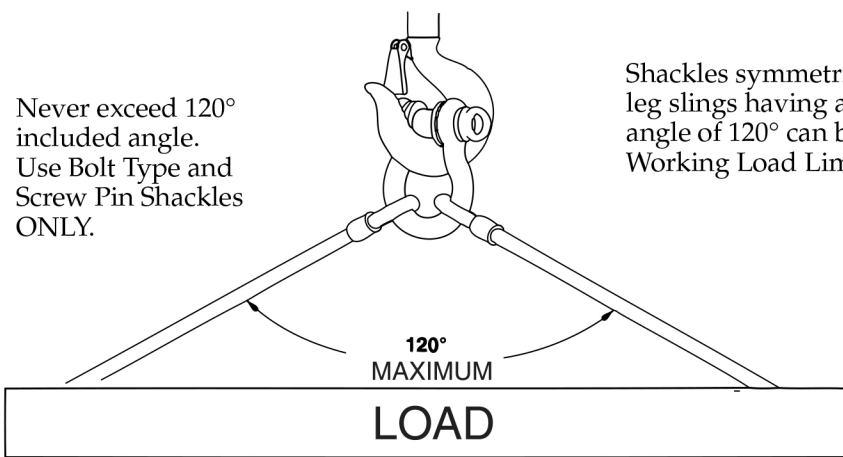
Table 1 Side Loading Reduction Chart for Screw Pin and Bolt Type Shackles Only+	
Angle of Side Load from Vertical In-Line of Shackle	Adjusted Working Load Limit
0° - 5° In-Line*	100% of Rated Working Load Limit
45° from In-Line*	70% of Rated Working Load Limit
90° from In-Line*	50% of Rated Working Load Limit

+ In-Line load is applied perpendicular to pin.
* DO NOT SIDE LOAD ROUND PIN SHACKLE.

For shackles larger than 125 metric tons, where the angle of the side load is greater than 5 degrees, engineering is required.

INCLUDED ANGLE - SHACKLES

Never exceed 120° included angle.
Use Bolt Type and Screw Pin Shackles ONLY.



Shackles symmetrically loaded with two leg slings having a maximum included angle of 120° can be utilized to full Working Load Limit.

For shackles larger than 125 metric tons, the maximum included angle is 90 degrees for full working load limit. Engineering is required if included angle is greater than 90 degrees.

WIRE ROPE SLINGS AND CONNECTIONS TO FITTINGS

USE A THIMBLE TO PROTECT SLING AND TO INCREASE D/d

NEVER PLACE EYE OVER A FITTING SMALLER DIAMETER OR WIDTH THAN THE ROPE'S DIAMETER

WIRE ROPE SLINGS AND CONNECTIONS TO FITTINGS

NEVER PLACE A SLING EYE OVER A FITTING WITH A DIAMETER OR WIDTH GREATER THAN ONE HALF THE NATURAL LENGTH OF THE EYE

SYNTHETIC SLINGS RATED LOAD

FOLDING, BUNCHING OR PINCHING OF SYNTHETIC SLINGS, WHICH OCCURS WHEN USED WITH SHACKLES, HOOKS OR OTHER APPLICATIONS WILL REDUCE THE RATED LOAD

BUNCHING **PINCHING**

ANSI B30.9-1994

CHOKER HITCH FORMED

WITH SHACKLES WITH CHOKER HOOK

WRONG! **PLACE PIN IN EYE OF SLING**

CORRECT!

SHACKLE POINT LOADING

POINT LOADING OF SHACKLE PINS IS ACCEPTABLE AS LONG AS LOAD IS REASONABLY CENTERED ON THE PIN

ALTHOUGH POINT LOADING IS ACCEPTABLE, A PAD EYE WIDTH OF 80% OR MORE OF SHACKLE SPREAD IS BEST PRACTICE